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How Public Sector Pay and Employment Affect Labor Markets

Research Issues

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Policy reform has focused on the reform of large, inefficient public sectors because of their cumulative negative effects on economic growth and competitiveness. The slow progress in restructuring the public sector in many countries highlights the need to address — more forcefully *and* more subtly — how public sector policies affect the labor market.

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Structurally, the public sector has a more important economic role to play in developing countries than in industrial countries, particularly in how it affects labor markets.

Evidence from many developing countries shows that public sector pay, employment, and performance are hurting the labor markets' ability to allocate workers among sectors and skill requirements. In many countries, the civil service and the public sector wage bill have grown to unsustainably high levels. The public sector is so big that interventions in the sector — with or without spillover effects into the nonpublic sector — make it more difficult for wages and employment to respond to shifts in demand and supply.

Nonwage benefits are seldom related to productivity, so they can be particularly distorting. At the same time, a long-term drop in real civil service wages and the compression of wage ranges have caused critical shortages of managerial and technical workers in the civil service. The resulting skill imbalances in the rest of the domestic economy reduce international competitiveness in some countries.

Policy reform has focused on the reform of large, inefficient public sectors because of their cumulative negative effects on economic growth and competitiveness. Policies to adjust relative prices from nontradables toward tradables have led to some movement of employment out of the public sector, but significant rigidities remain.

Workers are attracted to the public sector because of complex economic and social incentives that are difficult to change — and the relationship between public sector interventions and the underlying political and economic forces is an important area for research. The slow progress in restructuring the public sector in many countries highlights the need to address more forcefully *and* more subtly how public sector policies affect the labor market.

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A. Introduction

The public sector employs a large share of the formal sector work force and absorbs a large portion of government recurrent spending in many developing countries. At least in the early years of the fiscal retrenchment begun in the late 1970s and early 1980s, governments placed a high priority on maintaining the level of public employment, often at the expense of wages -- and, eventually, morale and productivity. These developments have led to a renewed debate on the appropriate role and size of the public sector as well as to a broad consensus -- that whatever its size -- the public sector must function as efficiently as possible. For these reasons, public sector wage and employment policies have been the focus of recent research and policy interest. Although there is broad agreement about some of the issues and their consequences for labor markets, empirical work on developing countries is sketchy, and the results are, at times, inconclusive. This paper reviews the issues and the empirical literature on the relationship between public sector employment, pay, and performance, and competitive labor markets. Because the size and the role of the public sector is qualitatively different in developing countries, the overview focuses on these countries and ignores the literature on the public sector role in industrial countries. The review also skips issues specific to public enterprises and their restructuring, but does provide comparative data on the parapublic and public sectors, where relevant.

The role of the public sector is particularly salient in light of the renewed emphasis on efficient labor markets as critical to sustainable growth. Labor markets have three kinds of effects on allocative efficiency between the macro- and microeconomies. They match labor supply and demand between workers and employers through the wage rate. They allocate workers among sectors by matching skills with job requirements through relative wages. And, they provide information about incentives for the allocation of resources over time, i.e., for human resource development through education and training. Evidence has accumulated -- some anecdotal and some empirical -- that a large public sector impedes the competitive functioning of labor markets and of the overall economy.

Public sector employment is thus an important concern for policymakers and researchers because of its contribution to fiscal imbalances, its effects on private labor markets, and the distortions that often affect human capital formation and the government's ability to produce goods and services efficiently. Each of these roles will be discussed in turn in light of the effect of these imbalances on labor markets.

Of particular interest is the economic restructuring under way in Central and Eastern Europe and in the former U.S.S.R. Reforms have led to sharp drops in output and real wages along with steep rises in unemployment and officially measured poverty. Since most or all of the modern sector labor force was publicly employed -- often with massive labor redundancies -- it is misleading to talk about "the appropriate balance between public and private" during the transition. The modern sector is generally considered to be composed of public and private enterprises that are subject to prevailing industrial and labor regulations. Under the command system, there was no real market for labor -- the price of labor was not intended to allocate labor or to determine techniques of production such as capital and labor intensity. Because input and output prices,

including the price of labor, were distorted, and because there was almost no legal private sector except for small shops, the labor market issues facing the postsocialist economies are quantitatively -- and perhaps qualitatively - different from those facing the developing world. But public sector wage and employment similarities are many-- real wage erosion, wage compression, an overextended and inefficient public sector, skill imbalances, corruption and other leakages -- and the lessons learned from evaluations of public sector employment in developing countries apply multiplicatively to the developing markets for labor in most postsocialist economies.

This paper comprises three sections. The first section summarizes the issues surrounding government's role as employer and producer. It discusses the mechanisms by which a large sector with administered wages and objectives other than profit-maximization -- the public sector -- could affect labor markets. The third section reviews empirical studies -- most of them culled from the Latin American and African experiences -- that have attempted to measure the effects of the public sector on the economies and labor markets of developing countries. The section also provides parameters for vague concepts like "the public sector is too large," and "the price of labor is too high." The paper concludes with implications for public sector employment policies -- and thoughts on directions for future research.

B. The Role Of The Public Sector--Theory And Stylized Facts

Discussions of "the public sector" may refer to some or all of the following: the central government civil service or the civil service at all levels of government, public servants like teachers and health care workers who may or may not be a formal part of the civil service, and employees of public enterprises. In general, data limitations -- particularly cross-country -- restrict the analysis to the central government.

The large, overstaffed, and inefficient public sector bureaucracy in many developing countries results from a number of forces. The rapid growth of public employment -- variously defined -- during the 1960s and 1970s in newly independent countries in Africa was in response to a perceived need to provide the infrastructure for development as well as basic social services. Government provision of basic education and health care at little or no cost to the beneficiary was seen as necessary to both growth and poverty alleviation. At the same time, high rates of population growth were forcing increasingly large cohorts of new entrants into the labor force. In many countries, there was a parallel expansion of public or quasi-public enterprises -- to promote development, to fill in the gaps of an inadequate private sector, to provide employment for educated nationals who would otherwise emigrate, to provide government revenues, and perhaps to provide patronage for politically important groups (Robinson 1991, 313). Outside of Africa, particularly in Latin America, the rapid growth of public sector employment was associated with import substitution, which required widespread state intervention.

Employment-generating policies were often viewed as tools for jump-starting economic growth and redistributing incomes. As the fiscal crises of the late 1970s and early 1980s deepened, countries and the international development organizations were forced to take a hard look at the size and composition of government spending. There was growing concern that government consumption--much of it wages in developing countries as a large share of GDP hurt economic growth. Although the evidence on this point is controversial,[1] a consensus evolved that employment and growth could be more efficiently generated by private investment -- or by government investment in inputs complementary to private production -- than by a similar amount of recurrent spending on public sector wages. As growth stagnated and government financial resources became increasingly strained, direct or indirect government involvement in the production of most goods and many services--public or quasi-public enterprises -- became harder to justify on the grounds of growth or efficiency.

The present concern with the role of the public sector reflects not only issues of productive efficiency, but is a fundamental component of -- and is driven by -- structural adjustment. A large share of the recurrent budget of many governments is wages, which means fiscal retrenchment is synonymous with a substantial reduction in the size of the state, as well as increased efficiency. This process also implies shifting the initiative for growth to the private sector. Because of the public sector's central role in the modern economy, the movement to reduce the size of the public sector has not only budgetary, but also macroeconomic, political, employment, and labor market effects.

The pattern of public sector retrenchment is predictable, proceeding from politically innocuous to politically costly measures. The typical response of a developing country facing a budget constraint is to cut capital spending, with negative effects on growth and on infrastructure development. The second stage usually entails cutting nonwage recurrent spending, which tends to reduce the availability of complementary inputs and can severely affect productivity and output. Next, wage growth or wages are capped or frozen, then employment is capped by stopping recruitment, eliminating ghost workers, revoking employment guarantees, and invoking other methods that do not affect the already employed. Last, retrenchment begins with nonpermanent employees, those near retirement age, and others who can be laid off with minimum political cost (Nunberg 1988; Robinson 1991, 315). Only as a last resort are large numbers of public servants laid off.

C. The public sector--paradigm lost

There is broad acknowledgement of a series of stylized facts (Nunberg and Nellis 1990:2-4). The public sector is too large because it is administratively and functionally unwieldy and because it employs too many people -- many agencies are overstaffed relative to other inputs or to output. Second, the public sector is too expensive in that the wage bill for government employees consumes too large a share of GDP or of government income to the detriment of other expenditures. Third, although the wage bill is excessive, individual compensation is often low -- particularly at the higher levels. Fourth, civil servants are ineffective or inefficient.

They do not adequately complete their assigned tasks or complete them more slowly or at higher cost than optimal. Fifth, because government is the wage leader of the modern sector, government pay and employment distortions negatively affect private labor markets.

The mechanisms by which these imbalances are induced and maintained are well-known; this paper focuses on the efficiency costs of public sector policies. Public sector wage setting and indexation, job guarantees, lifelong employment security, and fringe and nonwage benefits may all distort the price and supply of labor. Minimum wage regulations set a floor below which wages cannot fall, even when the market-clearing wage would do so. Because workers cannot be offered a lower wage, some are dismissed and some must find jobs in the informal sector, where wages are lower and flexible and labor laws are not enforced. Thus, formal sector workers keep their jobs at the expense of workers in the informal sector, and the equity consequences can be severe. Although economywide wage dispersion may increase, the range of public sector wages is compressed, resulting in disincentives for skills training on the part of providers and beneficiaries (see for example, World Bank, 1990). In particular, across-the-board minimum wages without special provisions for young people who are either unskilled or in on-the-job training programs -- a subminimum wage -- represent a substantial disincentive to hiring these job-seekers.[2]

Public sector wage indexation may promote inflation and lessen or change the distributional effects of policies that cut or change expenditure. By raising the cost of public sector labor, indexation also transfers the burden of labor market adjustment to those not covered by indexation and the unemployed. Employment security regulations may severely impede labor market flexibility by raising significantly the time and costs of dismissing unproductive or surplus workers -- making labor a quasi-fixed factor of production. Similarly, guaranteed employment schemes for secondary and university graduates can severely restrict the ability of the public sector to control employment. The schemes also can affect the demand for education, encouraging students who might otherwise opt for vocational or technical training to attend a university, often in a general, rather than a scientific or technical field (ILO 1990:20).

Government pay scales with automatic seniority increases lead to a growing wage bill even in the absence of wage increases, and are a built-in impediment to restricting spending on wages, forcing the real wage or the level of employment to adjust. The costs of job security -- implicit or explicit -- may be passed on to the employed in the form of lower wages, and to job-seekers in the form of private sector employer reluctance to hire new workers in an expansionary period because of the difficulty of shedding labor in a downturn. A large part of the compensation package in many civil services consists of deferred wages -- such as pensions and severance packages, or nonwage benefits, like travel and expense allowances or housing subsidies. Fringe benefit systems are usually opaque in execution, often corrupt, and result in horizontal inequity as workers at the same level tend to receive different total compensation (Lindauer, Meesook, and Suebsaeng 1988:23).

Government fringe benefits, like paid sick leave and allowances and subsidies for various purposes, are seldom legislatively extended to cover the private sector. They may, however, have significant spillover effects, most directly on labor supply behavior. The benefits increase the total cost of labor to the public sector and make wage setting less open and fair -- and thus may induce rent-seeking behavior. All of these measures, depending upon their coverage, lead to labor markets that are segmented between covered and uncovered groups. There may be increasing unemployment as workers try to move from the low-wage uncovered sector to the higher-wage covered sector.

Last, the size, composition and wage structure of the civil service can profoundly affect education and training. In many low-income African countries, the education system is oriented toward modern sector employment in general, and the civil service in particular. And wage compression may further discourage investment in education and training in specialties that are needed. In addition, during the economic stagnation of the late 1970s and early 1980s, some governments increased pressure on the educational system by guaranteeing civil service employment for some groups, such as university graduates -- usually after a waiting period -- although such measures are strongly discouraged today on grounds of efficiency and equity. The promise -- explicit for university graduates, implicit for less-well-educated job-seekers -- of secure, sometimes prestigious public sector employment created a vicious cycle of escalating expenditure and expectations. Higher education systems came under increased pressure as more people sought entrance.

As more graduates were produced, governments had to honor their commitment by increasing the numbers of civil servants -- leading to budgetary pressures, overstaffing, low morale, absenteeism, and other problems. As the fiscal crisis worsened in the 1970s and early 1980s, governments hired more people at all skill levels -- leading to a wage bill that crowded out other government functions, or to falling real wages for civil servants, or both. When governments finally ended employment guarantees and attempted to restrict employment, there were new job-seekers in the private sector -- trained largely at public expense -- with skills inappropriate to employment outside the civil service.

These processes in a prototypical economy have led to four generic imbalances, most consistently in Africa -- too many civil servants, excessive public sector wage bills, erosion of public sector salaries, and wage compression.

The public sector wage bill. The public sector wage bill is measured as a share of the total government budget, total government revenues, GDP -- or most commonly -- total recurrent spending. If the public sector wage bill grows so large that it crowds out other desirable recurrent expenditures -- typically for materials or operations and maintenance -- the wage bill is too high and there likely are too many civil servants. If supplies and complementary inputs for civil servants are insufficient, productivity is hurt. Examples are legion of teachers without books or paper, hospitals without supplies, and rural extension services without vehicles, tires, or gasoline.

The number of civil servants. Governments often hire countercyclically rather than in response to a demand for certain skills. The result is too many civil servants in certain categories -- unskilled and semiskilled, who may often be paid more than the reservation wage -- and too few skilled workers and managers, who are paid less than the reservation wage at their level. Thus, not only the level of employment, but the skill composition of the civil service leads to inefficient use of scarce resources.

The erosion of public sector salaries. As many governments became the employer of last resort -- at least for some groups -- government employment policies came to serve both productive and distributive functions, and took precedence over the role of government as provider of employment to as many as possible the role of government as producer of goods and services. Employment maintenance or expansion in the face of severe budget constraints was often accomplished by letting the real wage erode, particularly at the higher skill levels. In many countries, the return to civil service employment fell not only below the reservation wage, but sometimes far below GDP per capita, forcing civil servants to hold second and third jobs. The cumulative effect was often a disastrous erosion of public sector productivity and morale.

Wage compression. Wage compression has resulted from several processes--allowing the real wage to fall proportionately more for civil servants at higher skill levels in response to budgetary pressures, or raising the wage of the lowest-paid workers to maintain political support and patronage, promote social justice, or provide a minimum standard of living for the employed. The outcome is an additional loss of higher-level skills to the private sector, a process that further erodes civil service productivity and motivation (Nunberg and Nellis 1990:3-4).

Effects on macroeconomy

These policies have extremely damaging consequences for the economy. In the market model, government employment, pay and performance standards can affect the macroeconomy in several straightforward ways. Government spending on salaries and benefits is a component of aggregate demand and its management is a component of demand management. A change in spending on wages will, through the multiplier -- affect aggregate demand. If the wage bill rises without a concomitant increase in the production of goods, prices, the level of imports, or both will rise, thus worsening inflation or the balance of payments. If the wage bill falls, there will be a demand-led recession -- at least for the short term as labor is reallocated. Within a given wage bill, the distribution of wages according to administrative criteria may lead to inequity and inefficiency. Additionally, if the wage policies affect the skill mix and productivity of the public sector, national output -- and hence the individual's share of it -- may be less than under a system more responsive to market signals.

The government contributes not only to domestic demand, but also to domestic production, most of which is of services or public goods. As government producers are often monopolies and as the goods and services are usually freely provided to beneficiaries, output prices are not market-determined. Government

spending on wages and other inputs that produce public goods may be stimulative, contractionary, or neutral, depending upon whether it produces goods and services that enhance, diminish, or have no effect on the productivity of the private capital stock.

Although government output prices are not usually subject to market forces, input prices are. An uncompetitive price of labor cannot be easily maintained in outward-oriented productive sectors. Therefore, large public sectors are often found in countries with import-substituting trade regimes. High tariff and non-tariff barriers create excess demand for import substitutes, and make production for the domestic market more profitable than production for export. Because the domestic sector is protected, competitive pressures on labor markets are reduced. Although there is no reason why a country's trade regime should define the size and role of the public sector, the two are often linked, resulting in conditions that allow the most important modern sector employer -- the public sector -- to affect the price and/or supply of at least certain kinds of labor without reference to market-clearing levels.[3]

Because of high levels of protection, some sectors will be more capital intensive (the modern sector), and others more labor intensive than in open-economy equilibrium, leading not only to market segmentation, but also to distorted price signals that affect incentives to acquire over time certain types of education and training. This is also true of a government sector that allocates factors of production with regard to nonmarket criteria.

The government's wage and employment policies also affect the exchange rate and its management. The translation of a nominal devaluation into a real devaluation -- changes in relative prices -- depends upon interindustry factor mobility and flexible real prices, so if the price and supply of labor in a large public sector are prevented from changing, the adjustment of real values is limited. Labor market segmentation, induced at least in part by a large government sector, may reduce the effectiveness of an exchange rate adjustment -- devaluation -- because a nominal devaluation is absorbed more by the informal than by the formal sector due to indexation of government wages. Thus, nominal adjustment affects covered and uncovered groups differently, while the real adjustment that likely would facilitate growth is tempered or absent.[4]

Within the formal sector, the effects of devaluation depend on the existence of wage rigidity in the tradable- and nontradable goods sectors.[5] If there is wage inflexibility only in the government sector -- largely nontradables -- with limited spillover effects on the private (tradable goods) sector, a devaluation will cause prices to fall for tradables. In a small, open economy, demand for tradables is unlimited, so labor is absorbed in spite of wage rigidity in the public sector. In such a case, demand and output attain previous levels, but a larger share of output is in tradable goods (Horton and others 1991:19).

Even with wage rigidity in both sectors, however, a real devaluation that increases the price of tradables compared with nontradables can still lead to increased productivity and output in tradable goods. Therefore, devaluation, labor market flexibility, or both are necessary to achieve sustainable adjustment in

dualistic economies, and the greater the wage rigidity, the larger the needed devaluation, other things being equal. They key is whether the changes in relative prices lead to changes in the real economy, i.e., movement of labor and a shift in output from nontradables to tradables. As will be shown, declining real public sector salaries have led to some movement out of the public sector, but to a lesser extent and more slowly th predicted.

Government employment, pay, and performance can also affect the microeconomic behavior of firms and individuals. The response to a falling real wage may be either an increased preference for leisure or the transfer of work effort to outside endeavors where the returns are greater. Even for those who do not spend work time pursuing outside income, discipline can suffer, because those engaged in outside pursuits are in no position to reprimand those who are not (Lindauer, Meesook, and Suebsaeng 1988:22). Those with marketable skills tend to seek employment outside government, where the pay is better. The resulting skill imbalances within a production unit may further erode morale and productivity due to a lack of workers with complementary or managerial skills. Finally, public sector employment, pay, and performance policies may have direct and indirect effects on the behavior of microeconomic actors outside the public sector.

Spillover effects of government employment and pay

The spillover effects of government employment and pay include both static and dynamic effects for the private sector.

Static effects. Government spillover effects may take the form of employment and pay policies that apply only to government, but which affect private employers. Or their policies may be intended to affect the private sector -- for examples minimum wages, wage indexation, severance restrictions or mandatory severance compensation, or the mandatory provision of pensions and other benefits. All of these interventions raise the cost of labor -- or of certain kinds of labor -- to the private sector.

In economies where a large part of formal sector employment is in the public sector, the private sector labor market -- formal and informal -- acts as a parallel market to restore equilibrium. If spillover effects of deliberate restrictions on the private sector prevent the formal sector from restoring equilibrium, the informal sector will act as the equilibrating parallel market. When the government is forced to reduce the budget and current account deficits during macroeconomic adjustment, labor displaced by public sector retrenchment is expected to be most readily absorbed by the informal sector -- as the private formal sector firms involved in the production of nontradable or uncompetitive goods are often shedding labor and retooling as well. How much markets clear depends on the match of skills supplied and demanded, and also on the labor supply response.

Lindauer (1991b:78-84) analyzes the relationship between government wage and employment policies by reference to a hypothetical African economy with a two-sector -- public and private -- formal economy, and homogeneous labor skills and a homogeneous job type across sectors. His model addresses the

oft-contended notion that public sector wages in African countries are "too high" and presents three scenarios in which pay policy derives from employment goals. He also argues that government wage and employment policies do not necessarily spill over into the private sector in the absence of overt wage setting.

In the first scenario, government workers are paid in accordance with the reservation wage of marginal workers. With an upward-sloping labor supply curve, an expansion of government programs requiring an increase in the number of workers must necessarily entail a rise in the wage rate, and thus "high" wages. The problem, however, is not the wage rate, which results from market forces, but the expansion of government.

In the second case, government workers are paid more than the reservation wage for political or societal reasons. Relatively fewer private sector jobs are available at the higher wage offered in the public sector. Private employers may or may not hire more labor at a lower wage, and workers may or may not be willing to wait for scarce high-wage jobs. If the workers are willing to wait, open unemployment can result. Thus, government pay policy creates inefficiency in the public sector and may have spillover effects in the private sector, depending on labor's response.

In the third scenario, government pay is below the reservation wage -- for example, as the result of a fiscal crisis. Even if the government cannot or will not terminate workers, the lower wage bill may translate into lower wages -- if workers leave the public sector, wages are bid down, and the market clears at the lower-than-reservation wage. Alternatively, workers may stay in government for a variety of reasons -- such as job security, subsidized housing and other nonwage entitlements, social status, or opportunities for exploiting the government position -- and work fewer hours in order to earn money in other ways. In either case, government pay objectives will have been realized, but not employment and output targets.

Lindauer concludes that it is incorrect to view government pay policies as setting a standard to which private employers feel forced to adhere, thereby causing "high" wages throughout the formal economy. Rather, the spillover effects in the absence of other regulations like wage setting depend upon the extent to which government pay policies facilitate the attainment of government employment goals. Any tendency for private wages to follow public wages -- in the absence of institutions that constrain private wage determination -- may be attributed to labor supply behavior (Lindauer 1991b:87). The proper focus of attention is the optimum output and employment level of government, and hence the appropriate division between public and private employment. Another important aspect is the disjuncture between wage and nonwage signals and their effect on labor supply behavior.

The government may choose to follow a high-wage policy -- with wages above the reservation wage -- throughout the modern sector, thereby generating open unemployment or shifting employment to the uncovered or informal sector at a market-clearing wage. In this case, the absence of a pay differential between the public and private formal sectors does not indicate market efficiency, but rather that the institutional arrangements lead to or force wage parity. Formal or informal market segmentation as a result of differing

degrees of labor protection may also lead to persistent waiting unemployment (Riveros 1990:24). All of these arrangements have extensive welfare consequences. They lower the output of both sectors, encourage rent-seeking behavior by workers, and tend to foster capital-intensity in formal private sector production. The imbalance has two roots -- in government pay policies and in an institutional system wherein the private sector de jure or de facto must follow the government's lead (Lindauer 1991b:84-85). In this case, the focus of attention should be on reducing formal-informal labor market segmentation.

The existence of unemployment does not automatically indicate labor market inefficiency, however. First, unemployment at the macro level may be caused by inadequate demand as recession causes real wages and the wage share in national income to fall. If, as is generally agreed, the propensity to save out of wages is less than the propensity to save out of profits, then an increase in savings not offset by an increase in investment will lead to a fall in aggregate demand and increased unemployment. Since this unemployment is a demand problem, not a labor-market-adjustment problem, advocating additional declines in the real wage places an undue burden on labor markets. Second, if product markets are uncompetitive, unemployment may exist in spite of well-functioning labor markets. Third, labor markets may not work well, as evidenced by mismatches of labor supply and demand within and across sectors, occupations, and skills, and over time (Horton and others, 1991). In these cases, the solution may involve a combination of macro- and micropolicies, depending upon the source(s) of the disequilibrium.

Any attempt to evaluate the effects of labor market distortions must be analyzed for country specific circumstances. The effect of public sector interventions on the private sector depends upon the interventions' economic and sectoral coverage. The labor market effects of adjustment policies may be very different if wage rigidities affect the entire formal sector, only tradable goods, or only some tradables -- for example, importables. Another distinction that would affect macropolicy outcomes is the skill composition of the tradable and non-tradable sectors.

A second distinction--between the statutory and actual incidence of effects--is also needed. Depending upon the institutional environment, public sector interventions may be legally extended to cover none or all of the formal sector. On the basis of a large cross-section of countries, Heller and Tait (1984:8) calculate that, on average, 15 to 40 percent of the urban labor market in developing and industrial countries is directly or indirectly affected by the wage policies of the central government alone -- excluding state and local government and public enterprises. But, public sector wage legislation that covers some or all of the private formal sector may be enforced -- or may be widely ignored. The true impact of public sector wage and employment legislation must be analyzed in the actual -- not the presumed -- institutional context.[6]

Dynamic effects. The labor market effects of changes in public sector pay or employment will depend on the skill levels, ages, sex, and occupations of those affected. For example, Edgren (1987:15) argues that public sector employment has been an important factor in increasing female participation rates in the

modern sector labor force in Asia -- which is not to say that retrenchment would necessarily reverse the trend. If retrenchment involves mainly workers near retirement or those who will leave the labor force voluntarily, or workers who already have a second job, the labor market effects may be minimal. One common policy, inducing voluntary retirement through overly generous severance packages, may reduce civil service employment with minimal labor market effects. The fiscal benefits may be few to none, however, as the government's wage bill may increase for a number of years.

Significant public sector employment reductions usually destabilize the labor market. Those with the most marketable technical and professional skills usually do not work in the public sector in the first place because they can earn more on the outside and, if they do, they are in short supply and are too valuable to be laid off (Robinson 1991:317). The effects of public sector retrenchment depend on whether the private labor market is also in recession and, increasingly, on the labor market institutions in place -- to facilitate the transition to self-employment, for example. Robinson argues that laid-off civil servants probably need more assistance -- jobsearch skills and retraining -- than public enterprise employees, many of whom have transferrable skills. If the private sector is also retrenching, public servants likely have a double disadvantage -- they have less immediately transferrable skills, and they are often perceived by private employers as lacking discipline and motivation.

The above arguments consider wage and employment rigidities in the private sector as exogenously determined -- whether directly or through spillover effects -- by the public sector. However, there is a large body of literature on factors endogenous to a firm's profit-maximizing behavior that contribute to wage rigidity, see Riveros and Bouton, 1991. Efficiency wage theory argues that the correct standard of value for the cost of labor to a firm should be -- and according to this theory, implicitly is -- a unit of labor efficiency rather than a physical unit of labor, a worker. If workers have differing productivities unaccounted for by standard variables -- age, gender, schooling, seniority, regional differences, -- and if the wage-efficiency relationship and labor turnover costs differ, wages for workers of similar skills may also differ within and across firms and industries. Assuming there is a positive relationship between wages and productivity -- that higher labor productivity is induced by higher wages -- firms do not lower wages in the face of an excess supply of labor unless there is a prolonged period of high unemployment.

Thus, persistent wage rigidity in the modern sector even in the face of adjustment measures transfers the burden to the informal sector -- where the labor market functions neoclassically -- and thus may ultimately weaken political support for reforms which appear ineffective in the face of high unemployment. But, such rigidity does not prove that the public sector is wage-determining. The policy implication is that firms will respond to macroeconomic shocks by reducing employment, but not wages, so that average wages and relative wage differences across sectors may not adjust unless macropolicies are accompanied by micropolicies. Further, wages can be misleading indicators of rigidity or flexibility because nonwage costs may offset wage changes,

leaving the total labor cost unchanged. Only an analysis of a total compensation package can shed light on changes in the relative price of labor resulting from macroeconomic policies (Riveros and Bouton 1991:12).

Economic theory provides explanations for phenomena like unemployment, wage rigidity, and wage segmentation. Although these phenomena may be credibly attributed to labor market rigidities in general -- and to public sector distortions in particular -- the plausible causal links are many and complicated. If efficiency wage theory has application to developing economies--and this remains largely untested, (Riveros and Bouton 1991:19) -- it is not possible, even in a static analysis, to conclude that wage and employment rigidities in the private formal sector along with open unemployment are a priori evidence of spillover effects of labor market distortions caused by the public sector. Hence, in a dynamic context, the removal of public sector labor market distortions would be necessary, but not sufficient, to promote labor market flexibility. Similarly, economic reforms to enhance competitiveness -- devaluation and trade policy liberalization -- may or may not induce public sector labor market reforms, depending upon the relative importance of economic and sociopolitical factors.

Thus, the questions to be answered empirically include: Is the public sector important in developing countries in a way that it is not in developed countries? Are there wage and employment rigidities and output effects in the public sector? Do these spill over into the private sector? Have changes in the macroeconomic environment led to intertemporal and intersectoral shifts in the real price and supply of public sector labor, or vice versa?

D. Empirical Studies

The empirical literature on the impact of public sector pay and employment on developing country labor markets includes African and Latin American -- and a few Asian -- country case studies. Cross-country evaluations are few because they present almost insurmountable problems of data comparability. There is sufficient evidence, however, to provide careful answers to the questions posed in the preceding paragraphs. The first issue is the effect on the macroeconomy of the public sector, which is qualitatively different -- and greater -- in developing than in industrial countries. Part of this impact is through the labor supply, because the public sector is the leading employer in many countries. The impact of public sector labor's cost and its components -- wages, nonwage benefits, and wage compression -- on private and public labor markets is discussed in a number of studies. The section concludes with some evidence on the external effects of public sector labor market adjustments.

Effects of the public sector on the macroeconomy

Heller and Tait (1984:7-9) present convincing cross-country data on the structural differences in the role of government in developing countries relative to industrial countries. First, the central government

in developing countries employs a far larger share of the nonagricultural labor force--23 percent (31 percent in Africa)--compared with 9 percent, on average, for the OECD countries.[7] The public sector also absorbs a far larger share of formal wage employment in developing countries--for example, almost 80 percent in Zambia and other African countries (including parastatals), and 67 percent in Bangladesh (Lindauer, Meesook, and Suebsaeng 1988, 3; Murshid and Sobhan 1987:1).

Second, there is a point of inflection -- 20 to 25 percent of nonagricultural employment in the public sector above which public sector wages do affect national wage determination. This threshold is exceeded in a number of Western European countries and is 24 percent of nonagricultural employment, on average, in the public sector in OECD countries. It is crossed in almost all countries in Africa (54 percent), Asia (36 percent) and, to a lesser extent, Latin America (27 percent). Third, governments particularly in Africa tend to be overstaffed with administrators. Across all countries, there are 25 to 30 central government employees per 100 inhabitants who have administrative functions (Heller and Tait 1984:25). This number is highest in Africa (29 per 100), lowest in Asia (14 per 100), with Latin America and the OECD countries in the high range (22 and 25 per 100, respectively).

Data on aggregate civil service employment are not sufficient, however, for the analysis of underlying influences. Additional breakdowns by job categories and skill levels of workers, by job functions, by ministry or agency, are needed. In practice, data for such studies are often lacking, unreliable, or inconsistent. It is not uncommon, for example, for a ministry of finance's figures for the total number of civil servants and the total wage bill to differ (sometimes greatly), from the sum of the totals for the individual ministries. Thus, the notion of a public sector that employs "too many workers" is often a residual concept derived from inadequate operating budgets for nonsalary budget posts. Nonetheless, the available data indicate that a large public sector can negatively affect the economy in a number of budgetary and extra-budgetary ways.

Impact on employment

Although public sector employment does not respond to macroeconomic signals, many governments hire countercyclically (ILO 1990:19), and are then unable to release labor countercyclically -- supporting the notion that the public sector does respond first and foremost to political economy concerns. Empirical substantiation for the contention that the result is a surplus of public servants (relative to a base year) would be provided by the following: the ratio of the rate of growth of government employment (or spending on employment) to the rates of growth of GDP, all government spending, tax revenues, the total working age population, the modern sector labor force, or other indicators.

The wage bill as a share of government spending. The wage bill as a share of central government spending fell from 20.3 percent to 18.7 percent for developing countries in the aggregate between 1980 and 1987. The wage bill share rose slightly in Asia and sharply in the Middle East, remained constant in

Africa, and fell sharply in Latin America. In Latin America, for example, the wage bill share fell by 8 percentage points, other current spending rose by 2 points, capital spending by 6 points, and interest payments rose by almost 18 percentage points, belying the contention that a growing wage bill -- rather than debt service -- crowded out complementary public spending. In Africa between 1980 and 1986, interest payments rose by 9 points, and the shares of both capital spending and the wage bill remained constant, while nonwage current spending fell almost five points and the deficits widened, so that it is true that the wage bill was not cut during the initial years of increased constraints on noninterest expenditure (van Ginnekin 1990:445).

Robinson's survey of seven African countries, however, found that the wage bill had grown substantially in six of the seven (Robinson 1990:15).[8] When the change in the wage bill was decomposed into employment effects (a change in employment), salary effects (changes in the salary paid to each grade level), structural effects (changes in the distribution of employees among grade levels), and cross-effects, a differentiated picture emerged. In general, structural changes are less important than employment and salary effects.[9] In three countries (Ethiopia, Kenya, and Togo), the employment effect predominated. In Morocco, the effect of employment growth was slightly less than the effect of salary increases, and in Tunisia, salary increases were by far the most important factor in the growing wage bill. In Nigeria and Sierra Leone, the employment effect was strongly negative, but offset by salary increases in Sierra Leone, and barely offset by salary and structural changes in Nigeria. Finally, for the three countries for which time series are presented, the wage bill grew at a declining rate over time.

Growth of government employment compared with other indicators. During the entire period 1980-86, the rate of growth of government employment -- excluding public enterprises -- in Sub-Saharan Africa was greater than the rate of growth of the labor force. In seven of eight Latin American countries, government employment grew faster than total employment until 1984, but after 1984 was equal to or less than the rate of growth in the private sector.

In Africa during the late 1970s and early 1980s, the numbers of unskilled civil servants increased relatively faster than the overall rate of growth of the civil service. One reason for this is that day laborers are in a category separate from other civil service grades (and often unrecorded and untracked) in countries like Nigeria, Sudan, Uganda, and Zambia. When government hiring is frozen or capped, extra day laborers are hired as a way around restrictions (Lindauer, Meesook, and Suebsaeng 1988:20). An additional outcome of a shift in skill composition over time in Asia has been increased dualism. The movement in some countries to enforce protective labor and job security laws for covered workers has led to a worsening of conditions and skills -- and possibly of educational levels -- for uncovered casual and contract workers (Amjad and Edgren 1991:297; Horton and others 1991:56). The end result supports the picture drawn above--an uncontrolled expansion of both the number of civil servants and the total wage bill often go hand in hand with critical skill shortages.

Impact on wages

Determining the impact of the public sector on wages in an economy requires micro data on wages by the type of employment and skill level of workers.

Public/private differentials. The data on public-private pay differentials are difficult to interpret.[10] Heller and Tait find that the public sector in developing countries underpaid in the aggregate in the late 1970s/early 1980s. In OECD countries, the shares of general government wages in total nonagricultural wages and of government employment in total employment were similar (21 percent and 19 percent, respectively), indicating that the average wage in the public and private sectors was roughly equal. In developing countries, the ratios were 20 percent of wages and 26 percent of employment, indicating that civil servants, on average, are underpaid relative to their private sector count _arts (Heller and Tait 1984:12). The gap was largest in Africa and smallest in Latin America (8 and 4 percentage points, respectively). These numbers were not, and probably could not be, weighted by skill categories, so comparisons of average wages are misleading. It is easy to imagine a country where the percentage of unskilled labor in the public sector is much larger than in the private sector. Thus, because skill differentials could be both cause and consequence of cross-sectoral pay differentials, these latter do not necessarily indicate public-private pay differentials for similar workers.

van der Gaag and others (1989:82-85) found public wages to be well below private wages in Côte d'Ivoire and Peru in 1985-86. They argue that traditional wage equations that compare sectors assume incorrectly that employees are randomly distributed between the public and private sectors. If, on the contrary, employees are distributed according to a selection process determined by the preferences of employers and employees, wage equation estimates--which tend to show that public sector workers are better paid--are biased. Wage equations estimated with more sophisticated techniques show that although the average wage in the public sector was higher than in the private sector in both countries, a worker with the average productive characteristics of his or her sector (age, sex, education, marital status, experience), will be offered a substantially lower wage in the public sector than in the private sector. Those who select public sector employment have preferences, for example, for nonpecuniary benefits and intangibles like job security, that are not measured by the standard human capital variables.

The International Labor Office (1990:17) compared rates of pay in the public and private sectors across three occupations deemed to be comparable--computer programmer, office clerk, and stenographer-typist--and found no systematic cross-country differences even though pay differentials within countries for the same occupation could be large (up to 400 percent in isolated cases). A second ILO study (Robinson 1990) also did not find evidence for the contention that the public sector, particularly in Africa, pays more for unskilled workers. On the contrary, the private sector paid more for unskilled labor in six African countries in recent years (ILO 1990:18). But, the ILO did find broad evidence of a pay differential in favor of the private sector for higher-level occupations in the early 1980s in Africa, Asia and Latin America.

A second useful comparison is the public sector wage relative to average income per capita. In OECD countries, government workers earned (ca. 1980) on average, 1.74 times per capita GDP, but they earned only 13 percent more than the average noncentral-government worker in the formal sector.[11] In Asia, and Latin America, central government employees earned almost three times the GDP per capita, and 1.3 times the noncentral government wage in Latin America (Heller and Tait 1984:18-19). In Asia, although government workers earned, on average, 1.7 times the manufacturing wage, there was great dispersion about the mean, with government wages at or slightly below wages in industry for two countries--the Republic of Korea and Sri Lanka (0.95 and 0.99 respectively) (Edgren 1987:15). In Africa though, central government workers earned 6 times the GDP per capita, but only 80 percent of the average wage outside the central government, so that in spite of massive income inequality between the formal and informal economies, government wages are nonetheless low relative to the private formal sector (Heller and Tait 1984:18-19).

These data are not only dated, but also present a static picture. Employment has grown in most countries, sometimes at an alarming rate. There are countries in Africa like Ghana, Nigeria, and Zambia where civil service employment grew at an annual rate of 15 percent for many years (1975-83) (Lindauer, Meesook, and Suebsaeng 1988:2-3). Yet while employment has risen, at least until recent years, real public sector wages have fallen in most developing countries since the late 1970s and early 1980s for a number of reasons.[12] The picture of a drop in real starting salaries has been sharpest in Africa (30 to 40 percent fall, on average, between 1975 and 1985), and less so in Latin America (10 to 20 percent from 1980 to 1987). In countries like Ghana, Sudan and Uganda, starting salaries fell 70 to 90 percent in real terms in the decade from the mid-1970s (Lindauer 1991b:82). In Asia, the pattern is unclear. In Bangladesh, India, and Pakistan, for example, real wages have fallen, and in Malaysia and Indonesia, they have risen (van Ginnekin 1990:449; Irfan and Ahmed 1985:426). In general, the effect on performance has been severe, especially in Africa. In Uganda, estimates are that government workers spend only one-third to one-half of their working day executing the duties of office--the rest of the day is spent on acquiring outside income (Lindauer, Meesook, and Suebsaeng 1988:21). Although it is difficult to demonstrate causation between reduced pay and reduced effort -- and to discount the effects of other factors -- it is safe to hypothesize that falling real wages hurt worker productivity.

Public, private and parapublic sector comparisons. A 1989 World Bank study (Levy and Newman) provides indirect substantiation for the hypothesis of endogenous wage determination in developing country firms. Aggregate data for the modern sector in Côte d'Ivoire show a 16 percent drop in employment during the 1979-84 recession along with an 18 percent rise in real wages. It would be erroneous to conclude that high wages contributed to lower employment, however. Desegregated data show that the real wage fell for specific types of labor. The workforce at the end of the period had more education, training, and experience than at the beginning of the study, and workers with a given level of these attributes received a lower real wage

at the end of the recession than at the beginning. This occurred in spite of a drop in modern sector employment.

Wages for retained workers in the public sector fell from 13 percent less than in the private sector in 1979 to 19 percent less in 1984; for new hires, the wage differential increased from 4 percent less in public firms to 16 percent less--even when firm and worker characteristics were accounted for. Thus, the public sector (parastatal) effort to reduce the wage bill affected new employees more than the already-employed (Levy and Newman 1989:104-109). Moreover, among workers who kept their jobs, 47 percent of the workers in the public firms in the survey[13] experienced a drop in real wages, but only 43 percent of retained workers in the private sector experienced such a drop. Thus, wage restraint in the public sector appears to have been less than fully transferred to private firms.

A recent study from Uruguay shows a reversal of public-private pay differentials during the 1980s, (Geller, 1991). In 1981, with the base-100-December 1984, the real wage was 130 for the economy, on average; 135 for the public sector, and 126 for the private sector. After a severe drop in 1983-84, private wages more than recovered so that by 1988, the real wage was 121 for the whole economy, 111 in the public sector, and 130 in the private sector. Although the wages were the result of tripartite negotiations, and not market-determined, they nonetheless reflect increased constraints -- on and a real drop in -- public sector wages. In general, public sector employees in Latin America seem to have been paid less than private sector employees in the early-to-mid-1980s.[14]

The relationship between the public, private and parastatal sectors is difficult to quantify. Generally, civil service pay is, lower than parastatal pay, which is lower than private sector pay, except that the public sector pays more at the lowest skill levels (Robinson 1991:314). Rough data for Africa for the early 1980s support this picture (Lindauer, Meesook, and Suebsaeng 1988:13). As a result of pay differentials and the drain on public sector skills and budgets,[15] some countries like Nigeria, Sudan, and Zambia attempted in the late 1970s to legislate pay equality between the civil service and the parastatal sector. The result was usually even less openness and fairness in salary determination than before, as parastatals found ways to circumvent government restrictions. If such ways were not found, public enterprises were often unable to attract skilled workers, or lost them to the domestic or foreign private sector, thereby creating an additional hindrance to the productive efficiency of parastatals.

The minimum wage, employment, and skill formation. As in industrial countries, there is no firm consensus about the effect of minimum wages. Minimum wages have been far higher and far lower than reservation wages.[16] But now real wage erosion has severely affected the minimum wage in many African countries so that it is far below GDP per capita. Thus, distortions that might have existed have also eroded. An unresolved question is whether minimum wage laws constrain the incomes of a significant number of unskilled workers, and therefore affect wages and employment (ILO 1990:22). Camargo (1988:67-68) found that

about one-half of the percentage change in the minimum wage (positive or negative, nominal or real) in Rio de Janiero was passed through to the median wage. In Chile, changes in the minimum wage were "probably important" in affecting average wages and the level of employment of unskilled workers (Riveros 1990:17). In contrast, the ILO (1990:24) found no statistical relationship between changes in the real minimum wage and lagged changes in real average manufacturing earnings for six African and eight Latin American countries. The answer to a second question -- whether the minimum wage is a disincentive to human resource development, and therefore has indirect labor market effects -- is clearer. There is substantial evidence, not reviewed here, to this effect.[17]

On the general issue of incentives for skills acquisition, the ILO found no evidence of narrower pay differentials for skills in industrial relative to developed countries. Indeed, for many of eleven technical and skilled occupations, the pay differential relative to a construction worker was often wider in developing countries (ILO 1990:20).[18] Thus, the wage compression evident in the civil service of many countries has not had spillover effects on the private formal economy; rather, the gap between public and private at higher skill levels has widened. The ILO notes that no normative conclusions can be drawn from these data about differentials in any county being too low or too high, merely that there is no across-the-board relationship of pay levels that would by itself point to disincentives for skills training in developing countries.

The ILO study did not differentiate among public and private pay. However, Heller and Tait's study (1984) of public sector wage differentials also found few commonalities at the start of the 1980s. The standard deviation of wages across public sector positions relative to a clerical wage (=100) varied widely in 1980 across a selection of countries. It was rather high (120 to 135) in some African and Caribbean countries. In the most extreme case (Kenya), the wage index was 117, for nurses relative to clerical workers 708 for doctors, 164 for primary school teachers and 449 for secondary school teachers, yielding a standard deviation in Kenya of 208 -- exceeded only by Trinidad and Tobago (Heller and Tait 1984:49). Although the data do not point to any consistent pattern of wage compression, even by region, they do highlight differences in the returns to skills acquisition. The impression is one of wages administered in accordance with political economy criteria as much as by any assessment of the market return to different skills. Furthermore, these data were collected before the fiscal crunches of the 1980s, so the significant wage compression of the early to mid 1980s would change some of the numbers appreciably.

The importance of nonwage benefits

There is little consensus and, indeed, a limited empirical literature on the importance of the nonwage component of total compensation in the relationship between government pay and employment policies, on the one hand, and the nongovernmental wage economy on the other. There is much anecdotal evidence about the importance of nonwage benefits, but quantitative studies are few and do not lead to easy cross-county

generalizations. Nunberg (1988, 13) states pointedly that there is little World Bank recognition of the importance of nonwage benefits in labor supply behavior.

One line of reasoning is that the total compensation package is the relevant variable for the analysis of real wages and that wages are a poor proxy.[19] In some countries, wages are only about one-quarter of total compensation, which may include housing, health care, pensions. In Senegal for example, each job category carries a premium, which may or may not have a functional justification. All in all, 175 out of 250 items of pay are different kinds of pay supplements (Bloch 1985:10). The result is a system with little openness or horizontal equity.

The major fringe benefit in African countries is housing, which absorbs 25 to 35 percent of household income (Lindauer, Meesook, and Suebsaeng 1988:7). Housing benefits accrue to both public and private sector employees. In Nigeria in 1982, for example, housing allowances as a percentage of median salary were generally larger in the public sector; in Uganda, in 1983, private sector housing allowances were far less than for public or parastatal employees (Lindauer, Meesook, and Suebsaeng 1988:17). Other benefits like free or subsidized transport, health care, and family allowances are often substantial, but impossible to quantify, and Lindauer, Meesook, and Suebsaeng's impression is that these are not substantial relative to wages, have not increased as compensation for falling real wages, and -- de facto, if not de jure -- cover only a minority of government workers.

The few studies on nonwage benefits in Africa conclude that these are relatively unimportant in offsetting falling real wages because even a nonwage salary supplement of several hundred percent may be inadequate compensation for the drop in real wages (Lindauer, Meesook, and Suebsaeng 1988 Chew 1990). Basic starting salaries fell in real terms in many African countries in the late 1970s and early 1980s, in many cases, by more than the fall in real income per capita. In Ghana, the real basic starting salary for a grade 2 employee (director) fell to 10 percent of its 1975 level by 1983, while that of a grade 10 worker (messenger) fell to 40 percent of its previous level. In Uganda, top-level starting salaries fell by 1983 to 5 percent -- and unskilled salaries to 15 percent -- of their 1975 level. Only one salary category in one country -- workers with no diploma in Senegal -- maintained its real value over the period in the review of eight countries (Lindauer, Meesook, and Suebsaeng 1988:5-8). Thus, there was both a precipitous drop in real value and significant wage compression.

Similarly, there was no change in the overall picture in Zambia when nonwage benefits were included in calculations of total compensation packages. Lindauer and others (1988:10-11) calculated the trend in real basic starting salaries under various assumptions.[20] When salary alone was measured, the salary of a level S3 employee undersecretary was 45 percent of its real 1975 level in 1983 -- and the salary of a level S21 worker (the lowest category) was 83 percent. Under the most optimistic calculations, the highly paid employee's salary dropped to only 69 percent of its 1975 level by 1983, and the lowest-paid worker's salary maintained parity (98 percent). Thus, Lindauer and others discount the importance of nonwage benefits in Africa as compensating

for falling real wages and suggest that real starting salaries are a robust proxy for the total remuneration of government workers over time. Chew (1990:1007-1008) reaches the same conclusion about Uganda during 1976-88.

Robinson (1990) decomposed changes in the wage bill into employment, salary, and structural effects (see p. 15). He concurs that starting salaries are an imprecise proxy in Africa because some governments have been willing to make promotions easier as compensation for wage erosion. However, wage erosion was softened by only 5 to 20 percentage points, on average -- weakening, but not changing the trend. And although the observed trends in wage erosion and compression may be affected by such measures as more frequent promotions, the mitigating effects are short-term, at best. Further, increased rates of promotion, increased nonwage benefits, and so on do not address the macroeconomic or employment policy reasons for the eroding real wage. On the contrary, such measures tend to make future trade-offs more severe by widening the budget deficit, and creating more high-level salary earners for the future.

The unofficial fringe benefits of some civil service positions--access to otherwise unavailable goods and services, connections, bribery, and kickbacks are in certain cases large income increments. This unofficial remuneration may or may not follow the trend in real income. It is certainly unquantifiable and must be discounted for practical reasons. This omission in calculations, however, does not change the overall picture because those unofficial benefits are a source of income that is either unavailable or unimportant to the large majority of civil servants (teachers, laborers) (Lindauer, Meesook, and Suebsaeng 1988:10).

One result of falling real wages, especially in Africa, has been stagnating government productivity per worker. The drop in real salaries at higher levels has encouraged the proliferation of special allowances and supplements, made outright corruption more blatant and more acceptable, and led to reduced working hours (ILO 1990:19; Chew 1990:1009) and moonlighting (van der Gaag, Stelcner, and Vijverberg 1989:90). Indeed, Schiller (1988:31) and Chew (1990:1010) contend that the importance of nonwage benefits from an analytical perspective lies not in their quantitative trend compared with real wages -- which is country specific -- but in their perverse effect on productivity -- because most are unrelated to performance.

Data on wage compression

The distribution of salary levels among skills and occupations is country-specific and extremely difficult to compare within and across countries. There may be variance in wages, as well as in de facto wage compression by ministry, by region, or by other parameters. Comparisons are difficult even within an occupation. For example, the measurement of wage per unit of labor output of a primary school teacher, for example, depends not only on skill and seniority, but also on the number of hours taught, teacher-pupil ratios, and other factors. Nonetheless, the evidence of public sector wage compression is overwhelming.

In many countries, such as Zambia wage compression has resulted from explicitly redistributive policies; in other countries, it has been more implicit, for example through wage increases of equal absolute amounts across all twelve categories examined. The effect has been widespread and severe compression. For example, in Pakistan the ratio of the highest- to lowest- paid workers fell by two-thirds -- from 30:1 to 10:1 -- in 1970-84 (Irfan and Ahmed 1985:427). In Ghana before civil service reforms, the ratio was 2.5:1 (Nunberg and Nellis 1990:18). Lindauer and others (1988:12) found increasing compression over time across a selection of African countries. In Nigeria, the ratio of the highest-paid to lowest-paid worker fell in real terms to less than 40 percent of its 1975 level by 1983.

A study of the breakdown of public sector salaries by educational qualifications reaches the same conclusion about wage compression (Colclough 1991:214-19). In five African countries, the real starting salary for a university graduate fell between 1970 and the mid-to-late 1980s, and by a greater percentage than the real starting salary of any other skill group.[21] In all of the countries but Zambia, the real salary loss was greater than the drop in per capita GNP. When salary scales are used instead of starting salaries, as well as when real wage trends recalculated by occupational -- rather than educational -- levels are taken into account, the same wage compression is evident. If one assumes that the skill composition of the civil service did not change fundamentally, and Robinson (1990) concludes that structural effects in Africa in the early 1980s were small in most countries, real wage cuts -- although not necessarily declines in real income -- have been consistently borne disproportionately by educated public sector labor force entrants.

External effects

Riveros (1992:19-20) estimates the effect of a variable representing labor market distortions -- the ratio of nonwage labor costs to per capita income on the level of manufactured exports.[22] The hypothesis tested is the common notion that high non-wage costs of labor in the formal sector--either government-mandated or union-negotiated--in developing countries are a distortion in the labor market that keeps the cost of labor above market-clearing levels, thereby affecting international competitiveness. A group of countries is divided into "regulated" ones, where non-wage costs and regulations both exist and are enforced, and "liberal" ones, where such regulations are quantitatively less important or not enforced.[23] Riveros finds that the existence/ enforcement of labor market distortions has a statistically significant negative effect on non-traditional (manufactured) exports, and concludes that the removal of distortions, whether they be government-mandated or spillovers from the public sector, may have a positive effect on exports.

Another Riveros study (1990:37) concluded on the basis of an empirical study of Chile that the expenditure-reducing and expenditure-switching policies of macroeconomic adjustment should be accompanied by labor market deregulation (i.e., measures aimed at lessening segmentation) in order to minimize the adverse effects and inequitable impacts of macroeconomic reforms designed to bring about external adjustment. Thus,

public sector pay and employment policies can have negative effects also for international competitiveness, and measures aimed at improving competitiveness can be hampered by public sector rigidities.

The general picture that emerges from this review supports the stylized facts about public sector pay, employment, and performance in developing countries. The imbalances between the public and private sectors on the one hand, and between employment and pay objectives within the public sector on the other hand, are most obvious and severe in Africa, and to a lesser extent, in Latin America. In Asia, there are some countries which fit the picture, but the variance in all indicators is large.

Overall, the public sector has a structurally more important role in developing than in industrial countries. Among other things, it affects formal-sector wage determination, although not always straightforwardly. The public sector is large relative to the level of output, and it crowds out non-wage, non-interest government spending. The sector has grown larger -- relative to a variety of indicators -- for many years. Employment has expanded in tandem with massive wage compression and real wage erosion, but employment growth has abated in recent years.

Labor market effects -- static and dynamic -- are harder to sketch. Public sector wage policies are clearly important determinants of labor supply and demand, particularly when they create segmentation. Attempts to control public sector growth have tended to increase segmentation among unskilled workers. Low and compressed wages -- relative to the parapublic and private formal sectors -- have created a disincentive for human resource development in many countries and have drained the public sector of skilled workers.

It is segmentation -- the parallel and distinct markets that have grown out of cumulative interventions -- rather than any given public sector pay or employment policy that is damaging in a closed economic model. For example, several high-income, relatively high-growth OECD countries have high and administered wages -- and with wage compression far greater than in most developing countries.[24] But, coverage is economywide, so segmentation is minimal -- although international competitiveness may well be affected. In an open economy, the effects of public sector pay and employment distortions depend on the structure of the productive sector and the incidence of the interventions upon it. Technical competence is critical in whether interventions become distortions--interventions that are appropriately designed and implemented may be minimally distorting. However, the data base needed for such policy finesse -- particularly in the face of large and sudden intertemporal shifts -- is the exception rather than the rule.

In general, public sector pay and employment rigidities hinder the full adjustment of labor markets to macroeconomic policy changes. But the dynamic impact of any given intervention also depends upon the economic, sectoral, legal, and socio-political context. For example, Horton and others (1991:42) compare the effects of wage indexation during adjustment in two Latin American countries. In Brazil, although wage indexation contributed to hyperinflationary tendencies, the battle over wages really reflects underlying political-economic tensions about the distribution of output among social groups. In Costa Rica, by contrast, there was

a high degree of social consensus about necessary reforms. In that case, the wage indexation mechanism helped to moderate wage inflation.

E. Conclusions And Policy Implications

There is ample evidence of the high efficiency costs of public sector pay and employment interventions in economies where this sector overshadows and affects all formal private economic activity. Therefore, much effort has been devoted to reducing the size of the public sector, increasing its efficiency, and lessening its effects on private economic activity. The partial success of reform efforts has focused greater attention on the political economy of public sector pay and employment reforms. This review of several recent cross-country comparisons of reform efforts points up some lessons about the importance of political considerations for effective public sector analysis. In addition although further research is needed in several areas, some important policy messages can be drawn.

Reforms in sector pay and employment

Because of the primacy of labor markets to economic competitiveness -- and the negative effects a large or inefficient public sector can have on labor market competitiveness and the overall economy -- recent World Bank lending programs have focused on these issues. Indeed, public and parapublic sector pay and employment issues are at the top of the policy agenda in Africa (Lindauer 1991a:831). A recent World Bank review of the macroeconomic implications of public sector deficits (Easterly and Schmidt-Hebbel 1991:30) found that a loss of control over public sector wages and employment levels was a major contributor to fiscal deterioration, and that regaining control was essential to adjustment in eight of ten countries studied. Another World Bank survey of some adjustment programs found that civil service reform was addressed -- in all of the countries studied (Stevenson 1991:21-22). Reforms may focus on the entire public sector, the civil service, public enterprises, or on parts of these -- only teachers and health care workers, for example.

In the environment of fiscal stringency, a major policy objective in recent years has been to stop or slow the growth of the civil service. This focus is a major policy shift, in that the initial response to economic crisis in the late 1970s and early 1980s in many countries was to expand the public sector.[25] The new emphasis on public sector retrenchment has met with limited support in most countries where it has become policy. A common outcome, observed before and during managed reforms, has been wage flexibility without labor mobility. As discussed, in many countries, the real wage and the real exchange rate have fallen substantially during managed or ad hoc adjustment, creating as environment conducive to the movement of labor from the production of nontradables to tradables. In many of the -- mostly African -- countries studied by Nunberg and Nellis (1990:

34) and others, labor has moved into the agricultural and informal sectors with surprising ease. Nonetheless, mobility has been more limited than would be suggested by the, at times, precipitous drop in real wages.[26]

One set of explanations is methodological -- the tendency of studies to focus on wages, rather than on the entire compensatory package; and the importance of unofficial benefits. There is anecdotal and impressionistic evidence that the unmeasurable perquisites of civil service employment -- access to bribes, corruption, skimming of goods and services, or the intangibles of social status, connections, and implicit security --are equally important in influencing labor supply behavior. A second set of explanations is theoretical--the inflexibility of capital (credit) markets, which hampers labor's mobility due to a lack of complementary inputs; or product market rigidities and demand-side problems (see section A).

A third set of explanations concern political economy factors. Experience in many developing countries highlights the unique role of -- and expectations about -- the public sector in the domestic political economy. The distributive effects of public sector retrenchment are usually clear and immediate for certain influential groups. The government's primary constituency is the urban labor force, of which it employs a large share. When macroeconomic restructuring is implemented, any attempt to spread the burden most efficiently will affect the urban working class (civil servants), who may take to the streets as a result. Any attempt to protect government workers from the effects of retrenchment, however tends to affect others -- the private wage sector, the informal sector, and rural areas -- more severely. Thus, the trade-offs, while technically the same, are more consequential in developing than in industrial countries, where there is less income inequality and relatively fewer people live at or below subsistence (Riveros 1991:26).

In any case, one lesson learned from the generally slow pace of civil service reform is that a single-minded focus on the wage bill or the number of civil servants is ineffective. Three structural issues need to be considered simultaneously: the balance between wage and nonwage spending, the balance between the number of civil servants and their pay levels within a given wage bill, and the development of a pay and compensation package that is conducive to good performance (Schiller 1988:3). All the elements of government pay and employment--pay, grades, supplements, legal and illegal perquisites--are related, and pressure on one often triggers an adaptive response elsewhere in the system (Schiller 1988:32). As a first step toward comprehensiveness, most recent World Bank-supported programs address <u>both</u> wages and employment, and -- within employment -- its level and composition in the targeted sectors. Wage decompression is particularly important because of the depressing effects of low wages on performance, recruitment, and the retention of skilled -- particularly technical and professional -- workers.

A recent study of civil service reforms in regard to the education sector found that 65 percent of the countries with World Bank-supported civil service reforms, had frozen or capped, the total wage bill, while it was to increase in only 20 percent of countries studied. Most often, an increase in the total wage bill was the result of a proposed decompression of the civil service salary scale (Stevenson 1991:21), to be achieved by

removing the constraints on higher-level salaries or allowing the real minimum wage to fall more than higher-level salaries. The study found that progress was slow.

Another World Bank study of fifteen countries with Bank-supported civil service reform programs also found mixed results.[27] Although a primary goal of most of the programs was to reduce the aggregate wage bill, in ten of fifteen countries -- including those in which reforms had progressed furthest -- the wage bill as a share of government spending actually increased. Of the six countries with data on wage compression, half had decompression and half had further compression. There was virtually no progress on reducing or rationalizing nonwage benefits (Nunberg and Nellis 1990:17-22).

Although there was little fiscal improvement, there was some progress on employment reduction. Eight of the fifteen countries were able to implement some reductions, although three (Cameroon, Ghana, and Jamaica) had at least temporary slippage ex post. In the other seven countries, the rate of growth of employment remained more or less unchanged. All in all, net employment reductions were minimal, and not enough to generate sufficient savings to increase pay levels for remaining civil servants to compensate for previous years' salary erosion and compression (Nunberg and Nellis 1990:23).

Thus, the public sector -- measured variously by the wage bill or the level of employment -- continued to grow throughout the 1980s, although at a decreasing rate. In spite of the real wage trend, public sector employment continues to have great appeal, based in many countries -- particularly in Africa -- on expectations about job security and status without enforced performance standards, and on opportunities for moonlighting and rent-earning. This situation has perhaps changed in some countries in recent years -- largely due to the influence of the international development community -- but progress has been slower than anticipated.

The political economy of reforms

Colclough (1991:222) argues that in Africa, several factors work against wage restraint and public sector decompression. First is the commonly held view -- to which the government is often publicly committed -- that more generous compensation at lower rather than higher levels is equity-enhancing. A second factor is the high public profile of the minimum wage, even outside the formal sector. When given the choice between higher wages and more employment opportunities for the unskilled, African governments tend to prefer higher wages over more jobs. A higher public sector wage for the unskilled (minimum wage) translates into higher expectations for both actual and potential job seekers. It may also bring direct benefits to rural areas in the form of increased remittances.[28] Thus, it is easy for governments to garner support for a "high" public sector minimum wage, and the counter-arguments about decreased income equity, increased rural-urban migration, induced unemployment and underemployment, lower output, are harder for governments to publicize

effectively. So, wage restraint has been relatively unsuccessful in Africa because it has not been in the interests of governments to restrain wages at the bottom--even when to do so was a stated policy goal.

Similar arguments are put forth for the inv'ability of decompressing wages by raising pay at the top. Robinson (1991:314) argues that raising the salaries -- real and nominal -- of skilled workers for whom there is the greatest demand in the public sector would add very little to the total wage bill and a great deal to output and efficiency. The fact that wage decompression has nonetheless proved difficult to implement points to the widespread appeal of wage equalization as a social policy objective.

The evidence about the political economy of falling real wages is also mixed. Colclough (1991: 223) argues that the drop in real wages during the late 1970s and 1980s in Africa was not caused by any commitment to wage restraint, but primarily by a shift in approach to exchange rate management. Previously, an increasingly overvalued exchange rate helped raise the real wage in the modern sector. The reversal of approach toward exchange rate management was responsible for the decline in real wages more than was any move toward market determination in government wage-setting policies. These wage-setting policies remain l..gely beholden to the same political influences as in the years of public sector real wage growth. Edgren (1987: 19) questions whether officials are assumed to have outside income -- and hence an implicit acceptance of a corrupt or moonlighting civil service -- because public sector salaries in some Asian countries have so obviously fallen well below subsistence levels.

Nunberg and Nellis (1990:34) put a positive light on the slow pace of public sector reforms. Although the effects to date have been "negligible," the authors note that political resistance has been less than anticipated -- regimes have not been destabilized, and there have been no social upheavals. They caution, however, that most of the programs were in Africa, where labor is less well-organized politically than in other regions. The conclusion they reach is not that slow reforms indicate a lack of underlying support, but that the absence of serious political resistance reflects both the need for -- and perhaps a growing acceptance of -- more civil service restructuring.

Policy implications

The picture sketched above must be interpreted with considerable sensitivity to country-specific and region-specific characteristics. The common maxim that public sector wages are "too high," and they distort wages throughout the modern sector, is an oversimplification that applies primarily to unskilled workers in some countries, mostly in Africa. The long-term fall in real wages in many countries has been massively documented. In response, sectoral shifts of labor have generally been in the predicted direction -- from the nontradable to the tradable goods sector.[29] The magnitude of the shift, however, has seldom been as large as projected, and net employment in the public sector has remained remarkably resistant to adjustment. The difficulty of adjusting the supply of labor in the public sector may be the result of the political preference for adjusting the price of

public sector labor rather than the supply, labor's revealed preference for public sector employment, or both. In either case, the distorting effects on labor markets remain.

Three lessons can be drawn from this review about the effects of public sector pay and employment policies on labor markets. The first is that policies do matter -- each intervention has to be weighed in terms of economic and social costs and benefits to everyone. The effect of any policy may or may not be measurably distorting, but the cumulative effect over time of a large and inflexible public sector can be clearly segmenting, and thus detrimental for the entire economy. The prospects for inflexible economies are less than bright for three reasons: continuing fiscal and demographic pressures; a continuing need for flexible response to rapidly changing economic circumstances; and a parallel shift in many countries away from command economies toward more open, market-oriented systems. Thus, both macroeconomic and public sector policies that reduce flexibility and introduce segmentation between the formal and informal -- or covered and uncovered -- sectors need to be examined with care. Also, mere desegmentation is not enough -- the provision of appropriate education and training is an essential component of labor mobility.

The second lesson is that the analysis of presumed distortions must be approached cautiously-- simple theory and aggregate data do not always provide adequate explanations. The World Bank has been the most active participant in the collection and analysis of data, and the design of programs to address public sector imbalances. Still, more applied research would provide a better data base upon which to build the policy dialogue with governments. What is the nature and extent of labor market segmentation? How do government policies -- singularly and collectively -- contribute to segmentation? How do macroeconomic and labor market reforms affect one another? One problem is that even when civil service data are comprehensive and accurate, there is limited information about comparable private sector opportunities and about the absorptive capacity of the private sector -- formal and informal. More public-private comparisons are needed that which take into account job security, hours worked, pensions, and other benefits. The use of earnings functions would shed light on how changes in education, experience, skill, and other human resource parameters are related to changes in the aggregate wage. There is also limited information about the intended and actual functions of labor market institutions and about policies -- short-term compensatory and long-term -- that would aid the institutions' flexibility in responding to changing circumstances. Both of these issues are being addressed in recent country-specific analyses, but more work is needed.

The final lesson is that public sector labor market institutions and policies do not exist in a narrow economic context. The slow pace of public sector reform programs has perhaps demonstrated that it is the underlying attitudes that are rigid. Public sector labor market interventions reflect these attitudes, so their selective removal will be necessary -- but not sufficient -- for sustainable reforms. Measures to reduce public sector wage compression or levels of employment have largely been and will continue to be-half-heartedly implemented unless the underlying presumptions about wage equalization and the social value of public employment are addressed.

Endnotes

1. The literature that examines empirical links between policies and growth is vast, yet inconclusive. Some studies have found that the government spending/GDP or the rate of growth of government spending are negatively correlated with economic growth (rate of growth of GDP). One empirical study of thirty-one countries found that labor market distortions -- defined in part through evidence of government interventions in labor markets -- accounted for about 10 percent of the variation in economic growth (Agarwala 1983:27). Other studies have found no correlation (World Bank 1988:51-52). A recent methodological study questions the robustness of the relationship between policy variables and economic growth and finds the correlation of all policy variables (except investment/GDP) with growth to be fragile. The authors hypothesize that no single policy -- including government size -- is demonstrably detrimental or crucial to growth (Levine and Renelt 1990).

2. There is no consensus however in the industrial country (largely U.S.) literature about whether a minimum wage has a measurable negative impact on employment in general, or on specific groups like young people.

3. See Adams and others (1991) for a summary of the literature.

4. See Riveros (1991) for a review of the literature on wage indexation in developing countries.

5. Although the discussion is couched in terms of wages, the relevant variable is the real cost of labor, which may or may not move in the same direction as the real wage. See below for a review of the literature on whether public sector wages are an acceptable proxy for total labor cost.

6. Indeed, Geller (1991:187) argues that labor market deregulation in Latin America is aimed not only at generating employment, but at normalizing the illegal flexibility that already exists.

7. All data from Heller and Tait (1984) refer to the years 1979-81. Although the numbers for individual countries may have changed, there has been no comprehensive update, and it is safe to say that broad comparisons remain accurate.

8. The countries are Ethiopia, Kenya, Morocco, Nigeria, Sierra Leone, Togo, and Tunisia. Wage bill growth ranged from 1.1 percent (Nigeria, 1980-85) to 322.7 percent (Kenya, 1980-87).

9. Structural changes included laying off unskilled workers at lower grades and moving employees up job ladders to compensate for increased responsibilities as unskilled workers were laid off. Salary inflation can also compensate for falling real wages. Only in Nigeria does it appear that salary increases and upgrading offset the effects of retrenchment, leading to a very modest increase in the wage bill. Chew (1990) also presents evidence of compensatory upgrading in Uganda.

10. See van der Gaag, Stelcner, and Vijverberg (1989) for a synopsis of recent empirical studies.

11. The formal sector includes nonfinancial public enterprises, state and local government, and the private sector.

12. See for example, Colclough (1991); World Bank (1991); Chew (1990); Robinson (1990); ILO (1990); van Ginnekin (1990); Nunberg and Nellis (1990); Lindauer, Meesook and Suebsaeng (1988); Nunberg (1988); Schiller (1988); Murshid and Sobhan (1987); Irfan and Ahmed (1985); and Heller and Tait (1984).

13. Public firms are defined as at least 50 percent publicly owned. n = ± 10,600 workers.

14. See, for example, Lopez and Riveros (1989).

15. Lindauer et al. (1988:15) note that these are related issues. The government is disadvantaged vis à vis the state-owned sector in two ways. First, the state-owned sector receives financial resources and second, it uses these resources to attract skilled workers away from the civil service.

16. In Burkina Faso in the early 1980s for example, the minimum wage was more than 900 CFA per month, while the going rate for a laborer was about 150 CFA. In Thailand however, the first minimum wage (1973) was 12 baht/day, only about half of the going wage for unskilled non-agricultural labor (ILO).

17. See, for example, Lopez 1992 (forthcoming).

18. Salaries from the years 1985-88. They are usually average salaries, and do not differentiate between public and private wage rates.

19. For example, Nunberg (1988, 13) contends that nonpecuniary benefits offset the effects of wage compression and salary erosion, particularly in Africa, and are therefore important in influencing labor supply behavior. van der Gaag and Vijverberg (1988:251) find nonwage benefits probably important in influencing labor supply behavior in Côte d'Ivoire. Riveros (1991, 12n.) finds that although real wages have fallen in countries like Columbia and Venezuela, real labor costs have not changed due to the offsetting increases in nonwage compensation.

20. Assumptions included a housing allowance or imputed rent, incorporation of salary progression, and salaries net of taxes for both single people and heads of household.

21. The countries are Botswana, the Gambia, Kenya, Sierra Leone, and Zambia. The initial year is 1970, 1971 or 1972, and the most recent year varies from 1983 to 1987. Educational categories are unskilled, primary, middle secondary, higher secondary, and university graduate.

22. High nonwage labor costs are not necessarily distorting--the total may be market-clearing, and the balance may reflect the negotiated preferences of employers and employees. However, nonwage costs exogenously imposed by the government would be distorting. Thus, in a cross-country context, a high ratio of nonwage costs to per capita income, the opportunity cost of labor -- is an appropriate proxy for the level of formal sector labor market distortion in a country (Riveros, 17n.)

23. Hong Kong and Korea are countries in the study in which the minimum wage and job security respectively are quantitatively unimportant, and Nigeria exemplifies countries where laws on the books are largely unenforced.

24. For example, a doctor earns only 1.5 times more than a clerical worker in Sweden, and only twice as much in Australia, yielding standard deviations across all public sector occupations of only 18 and 29 respectively (Heller and Tait 1984:49).

25. The growth of the public sector as a response to economic crisis is documented in studies of Egypt, Malaysia, and all five Latin American countries studied by Horton and others (1991:43).

26. See for example, Nunberg and Nellis (1990:23), Riveros and others (1990:1).

27. The authors caution that both reviews are snapshots of countries in different stages of implementation, and that few of the programs are long standing.

28. Colclough cites Botswana, where two-thirds of rural households received some remittances from urban workers in 1977. However, Adams contends that the equity impacts may be negative in the case of Egypt because remittances are earned mostly by upper-income villagers (World Bank 1991:47).

29. Several authors note that sectoral shifts have led to increased (relative) employment in agriculture in those countries where food is a tradable good, a shift that flies in the face of traditional notions of development's entailing movement from agriculture into the modern sector (see Horton and others 1991:56).

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